WHAT IS CLAIMED IS

1. A phase compensation method which uses a phase plate to compensate for an optical phase of a reproduced signal in a reproducing optical system which is provided with respect to the reproduced signal from an optical recording medium, comprising the step of:

controlling a position of the phase plate within a predetermined variable range depending on a type of the optical recording medium, so that a carrier-to-noise ratio of a reproduced signal from a track which is being reproduced becomes a maximum or, a DC fluctuation of the reproduced signal becomes a minimum or, a crosstalk level from tracks adjacent to the track which is being reproduced becomes a minimum.

2. A phase compensation method which uses a phase plate to compensate for an optical phase of a reproduced signal in a reproducing optical system which is provided with respect to the reproduced signal from an optical recording medium, comprising the steps of:

(a) detecting a position of the phase plate where a carrier-to-noise ratio of a reproduced signal from a track which is being reproduced becomes a maximum or, a DC fluctuation of the reproduced signal becomes a minimum or, a crosstalk level from tracks adjacent to the track which is being reproduced becomes a minimum;

(b) storing control data related to the position of the phase plate depending on a type of the optical recording medium; and

(c) controlling the position of the phase plate within a predetermined variable range based on the control data.

3. The phase compensation method as claimed in claim 2, further comprising the step of:

(d) recognizing the type of the optical recording medium.

4. The phase compensation method as claimed in claim 3, further comprising the step of:

(e) obtaining the control data at a time of loading the optical recording medium.

5. The phase compensation method as claimed in claim 2, further comprising the step of:

(d) obtaining the control data at a time of loading the optical recording medium.

6. An optical storage apparatus comprising:

a phase plate which compensates for an optical

phase of a reproduced signal in a reproducing optical system which is provided with respect to the reproduced signal from an optical recording medium;

a detector which detects a position of the phase plate;

a varying unit which varies the position of the phase plate; and

a control unit which controls the position of the phase plate within a predetermined variable range depending on a type of the optical recording medium, so that a carrier-to-noise ratio of a reproduced signal from a track which is being reproduced becomes a maximum or, a DC fluctuation of the reproduced signal becomes a minimum or, a crosstalk level from tracks adjacent to the track which is being reproduced becomes a minimum.

7. The optical storage apparatus as claimed in claim 6, further comprising:

a memory which stores control data related to the position of the phase plate where the carrier-to-noise ratio of the reproduced signal from the track which is being reproduced becomes the maximum or, the DC fluctuation of the reproduced signal becomes the minimum or, the crosstalk level from the tracks adjacent to the track which is being reproduced becomes the minimum,

said control unit controlling the varying unit based on the control data stored in the memory.

8. The optical storage apparatus as

claimed in claim 7, wherein said memory stores control data within one track or, within a plurality of tracks or, within one zone of the optical recording medium.

9. The optical storage apparatus as claimed in claim 6, further comprising:

a recognizing unit which recognizes the type of the optical recording medium.

10. The optical storage apparatus as claimed in claim 6, further comprising:

another phase plate which is fixed within the reproducing optical system.

11. The optical storage apparatus as claimed in claim 6, further comprising:

means for obtaining the control data when loading the optical recording medium into the optical storage apparatus.